

COMPLETE LISTING OF CLAIMS, INCORPORATING AMENDMENTS
IN RESPONSE TO OFFICE ACTION DATED 17 AUGUST 2005
FOR SERIAL NO. 10/748,913

1. (Canceled)
2. (Canceled)
3. (Currently Amended) ~~The method of claim 1 wherein said impregnating step comprises:~~
A method of making an extractant material adapted to remove contaminants from fluid waste, comprising:
 - a) Providing at least one porous molded glass matrix comprising perforated hollow glass crystalline microspheres obtained from fly ash, and
 - b) impregnating said microspheres with an extractant compound by
 - i) ~~(a)~~ dissolving at least one reactant used to make said extractant compound in a solvent,
 - ii) ~~(b)~~ loading said solvent containing said at least one reactant into said porous matrix under vacuum,
 - iii) ~~(c)~~ drying said matrix,
 - iv) ~~(d)~~ dissolving at least one other reactant used to make said extractant in said solvent,
 - v) ~~(e)~~ repeating steps ii) ~~(b)~~ and ~~(c)~~ iii) with said at least one other reactant, to cause said reactants to react and precipitate said extractant compound in-situ, and
 - vi) using ammonium molybdophosphate (AMP) as said extractant compound and ammonium hydroxide as said solvent.
4. (Canceled)

5. (Canceled)
6. (Canceled)
7. (Canceled)
8. (Currently Amended) A method of making an extractant material adapted to remove contaminants from fluid waste, comprising:
 - a) Providing at least one porous molded glass matrix comprising perforated hollow glass crystalline microspheres obtained from fly ash, and
 - b) impregnating said microspheres with an extractant compound by
 - i) dissolving at least one reactant used to make said extractant compound in a solvent,
 - ii) loading said solvent containing said at least one reactant into said porous matrix under vacuum,
 - iii) dissolving at least one other reactant used to make said extractant in said solvent,
 - v) flowing said solvent containing said at least one other reactant around said microspheres, to diffuse said at least one other reactant into said microspheres and precipitate said extractant compound in situ, and
 - vi) using ammonium molybdophosphate (AMP) as said extractant compound and ammonium hydroxide as said solvent.

9. (Currently Amended) The method of claim 8 wherein said extractant compound is AMP and said at least one reactant comprises NH_4NO_3 and $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}$ in a citric acid and water solution, and said at least one other reactant is $(\text{NH}_4)_2\text{HPO}_4$ in water.

10. (Currently Amended) The method of claim 8 2 wherein said extractant compound is octyl(phenyl)-N-N-diisobutyl-carbamoylmethylphosphine oxide (CMPO), and said solvent is selected from the group consisting of acetone and hexane.

11. (Currently Amended) The method of claim 8 2 wherein said extractant compound is selected from the group consisting of resorcin formaldehyde resin (RFR) and a tertiary phosphine oxide POR where R = alkyl groups having 5-9 carbon atoms.

12. (Original) The method of claim 11 where said tertiary phosphine oxide is iosamyl-heptyl-nonyl-phosphine oxide.

13. (Canceled)

14 - 22.(Withdrawn)

23. (Canceled)

24. (Canceled)

25. (Currently Amended) ~~The~~ An inorganic ion exchange material of claim 24 wherein said ion exchange compound is AMP and said solvent is ammonium hydroxide, adapted to remove radioactive ions from acidic waste liquid, made by:

i) providing at least one porous molded glass matrix comprising perforated hollow glass

crystalline microspheres obtained from fly ash, and

ii) impregnating said microspheres with AMP and using ammonium hydroxide as a solvent.

26. (Original) The inorganic ion exchange material of claim 25 wherein said radioactive ions are cesium ions.

27. (Original) The inorganic ion exchange material of claim 25 wherein said radioactive ions are selected from actinides and lanthanides.

28. (Original) An inorganic ion exchange material comprising a porous molded glass matrix comprising perforated hollow glass crystalline microspheres obtained from fly ash, wherein said microspheres are impregnated with AMP.

29. (Original) The inorganic ion exchange material of claim 28 further containing ions selected from cesium ions, lanthanide ions and actinide ions.